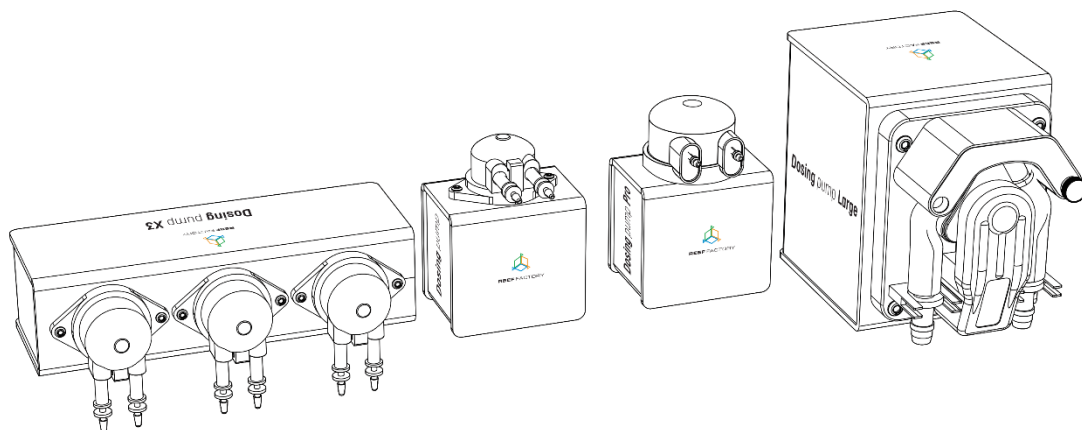**REEF** FACTORY

**User manual**

**ver. 1.5.0**

# Dosing pump, Dosing pump Pro

# Dosing pump X3, Dosing pump X4,

# Dosing pump Large

Dear customer, **thank you for your purchase.**

**ENGLISH**

**www.reeffactory.com**

# Table of contents

> **!** ATTENTION: The Dosing pump series of the device are not completely waterproof. Avoid submerging them in water as this may cause permanent damage to the device. The unit should be installed in a dry, moisture and splash-free location. Do not mount the unit directly over the sump or in the immediate area of skimmers and other splash and aerosol generating equipment.

> **!** ATTENTION: Read the manual carefully before use. There might be slight differences between this manual and what is presented on the screen. This manual contains information about the device functions that operate with the latest firmware. Information about the firmware version installed on the device is always displayed in the lower right corner above the serial number. If the device version is older, please update the device firmware to get access to the latest features. Included with the device are: dedicated power adaptor, silicone tubing, magnet for resetting the device and quick start guide.

> **!** ATTENTION: Dosing pump / Dosing pump X3 / Dosing pump X4 / Dosing pump PRO / Dosing pump Large are similar in terms of functionality. However, they differ when it comes to accuracy of the dosing. Dosing pump and Dosing pump X3 have the accuracy of 0,1 ml, Dosing pump PRO accuracy is 0,01 ml and the Dosing pump Large is high performance pump designed for water refill purposes. The base unit for Dosing pump Large is 1 liter.

**ATTENTION: UNPACKING**

**During transportation, protective packaging was used to protect the appliance against any damage.** After unpacking, please dispose of all elements of packaging in a way that will not cause damage to the environment. All materials used for packaging the appliance are environmentally friendly; they are 100% recyclable and are marked with the appropriate symbol. Caution! During unpacking, the packaging materials (polythene bags, polystyrene pieces, etc.) should be kept out of reach of children.

**ATTENTION: DISPOSAL OF THE APPLIANCE**

Old appliances should not simply be disposed of with normal household waste, but should be delivered to a collection and recycling centre for electric and electronic equipment. A symbol shown on the product, the instruction manual or the packaging shows that it is suitable for recycling. Materials used inside the appliance are recyclable and are labelled with information concerning this. By recycling materials or other parts from used devices you are making a significant contribution to the protection of our environment. Information on appropriate disposal centres for used devices can be provided by your local authority.

**ATTENTION: Wireless network WI-FI**

The offered devices communicate using the WI-FI wireless network in the 2400 to 2485 MHz (2.4 GHz) frequency band in the 802.11 b / g / n standard. To be able to configure the device, you must have a computer or mobile devices that work in the standard indicated above.
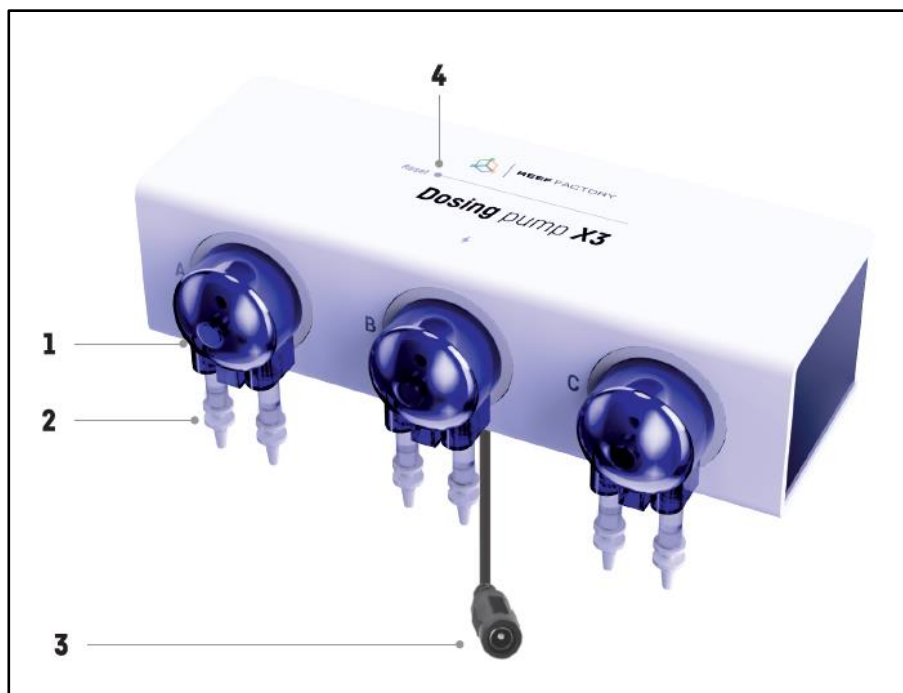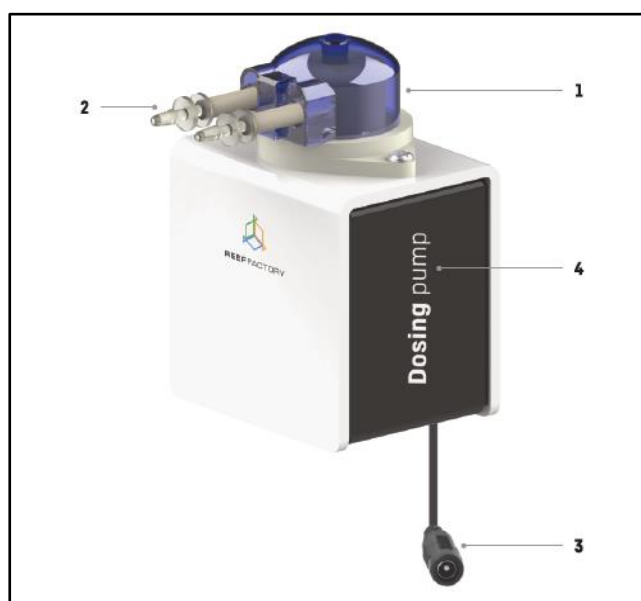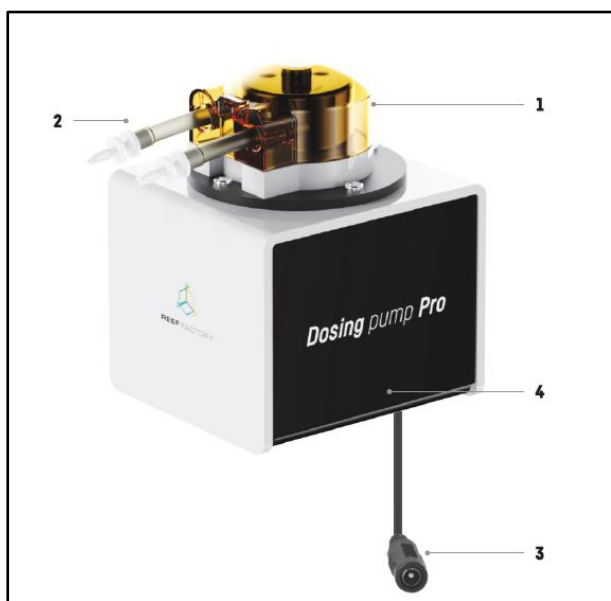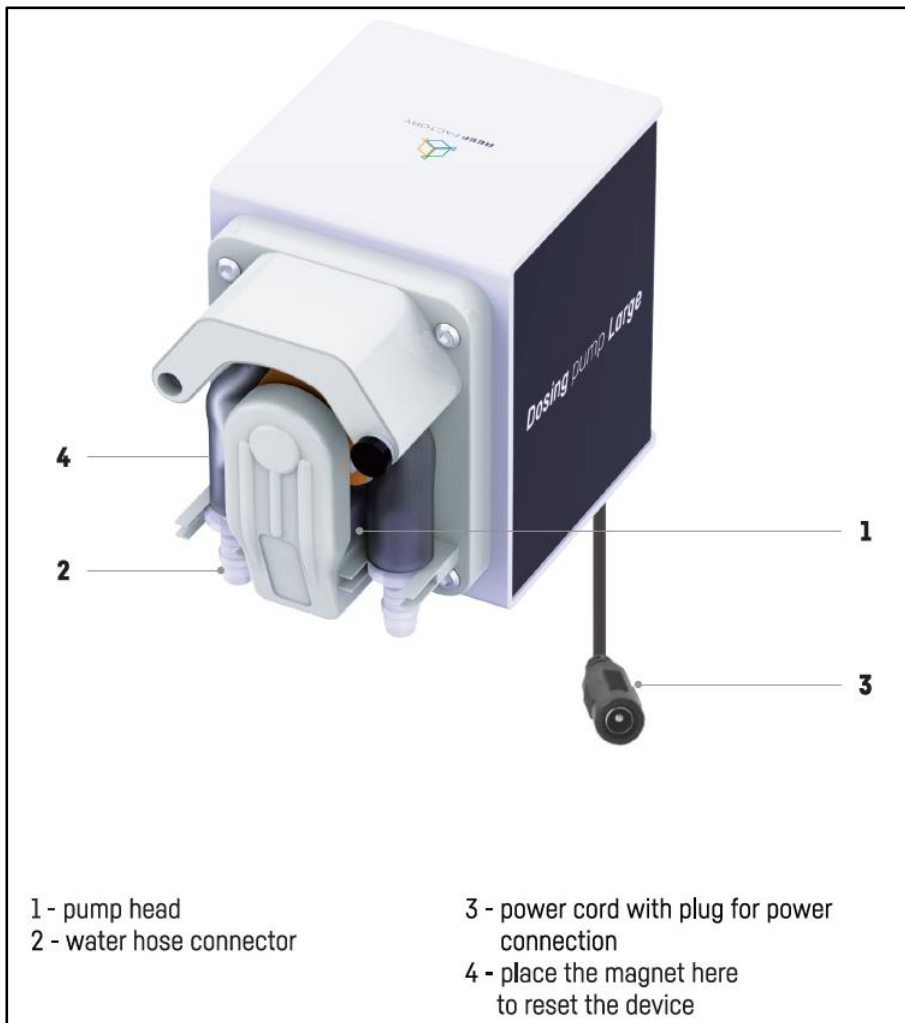
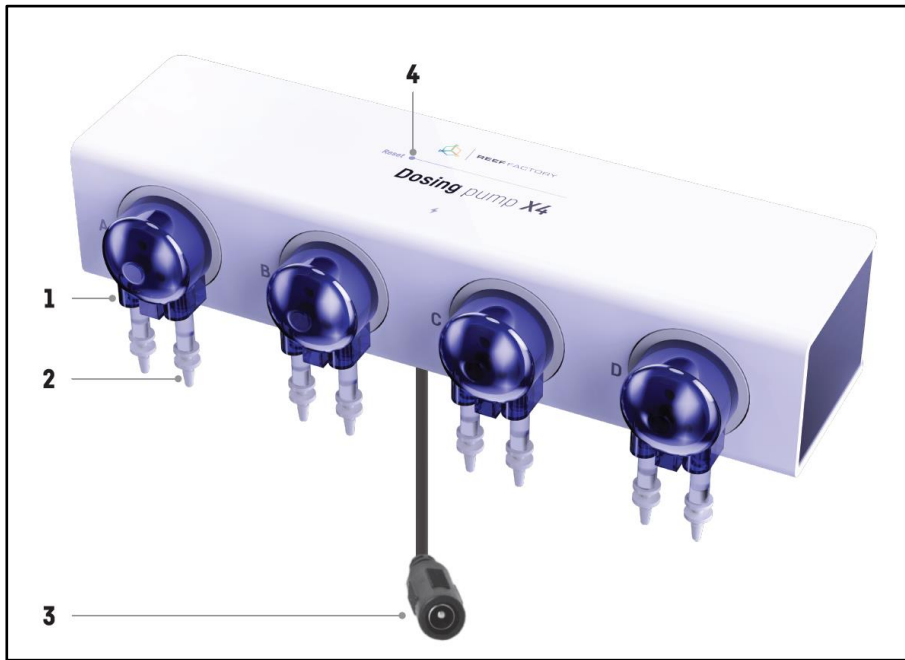**?** **Do you need our help? Write to support@reeffactory.com**

# I.   Initial configuration

To configure the device properly, please follow the instructions below.

1. To properly install the Dosing pump / Dosing pump PRO / Dosing pump X3 / Dosing pump X4 /Dosing pump LARGE, familiarize yourself with the graphic below. Pay attention to the markings on each element to properly connect the device.

© Reef Factory 2022

1 - pump head
2 - water hose connector

3 - power cord with plug for power
   connection
4 - place the magnet here
   to reset the device

2. Mount the pump head on the pump shaft, cut the silicone tubing to the desired length (remember that they shouldn't be longer than 2 meters as it may influence the dosing accuracy), remove the pump head connector covers and then connect the tubing to the pump heads. Put the other end of the tubing to the container and into the aquarium respectively.

3. After successfully connected all the tubing, place the pump in the safe and easy access spot. The pump can operate in every orientation. Connect dedicated 12V power adaptor.

> **!** **ATTENTION: Check if the flow direction is correct. The liquid should be pumped from the container to the aquarium. When the pump is dosing white light indicator is on in the middle part of the housing.**

4. Dosing pump Large can be equipped with tubing longer than 2 meters.

5. The device can be configured using a browser on your computer, laptop, tablet or smartphone. To do this, open the list of available Wi-Fi networks and find the network that name corresponds with serial number of the device, for example:

   - **for Dosing pump:**        **RFDPXXXXXXXXXXXX.**
   - **for Dosing pump Pro:**     **RFPPXXXXXXXXXXXX.**
   - **for Dosing pump X3:**      **RFDXXXXXXXXXXXXX.**
   - **for Dosing pump X4:**      **RFDZXXXXXXXXXXXX.**
   - **for Dosing pump Large:**   **RFDLXXXXXXXXXXXX.**

   Our device works with 2,4 GHz bandwidth. To log in use password: **reeffactory**

6. When you are connected to the device's network open your browser and go to www.dosingpump.io If you see the message below after you've entered the correct address in the address bar it means that you may be still connected to your home network (wired or wireless).

> This domain is used to configure **Smart Reef** device.
> If you see this text it means that you are not logged properly into device Wi-Fi.
>
> Please connect to the Wi-Fi device only (Wi-Fi password is ***reeffactory***) and refresh this page.
>
> **REEF** FACTORY

Try to connect with the device one more and repeat the procedure.

# II. Operation mode configuration

**Configure the device in five simple steps.**

---

**Step one** – chose language which you would like to use.

**Step two** – set the amount of liquid that the Dosing pump should dose during 24h period, the number of doses and the start time of the dosing. The pump will automatically calculate the amount of liquid per dose and the start time of each single dose.

For the Dosing pump X3 / Dosing pump X4 you can configure all dosing pumps at once.

## Device setup

### Dose configuration

| | | |
|---|---|---|
| Pump A liquid amount: | ml | ml |
| Pump B liquid amount: | ml | ml |
| Pump C liquid amount: | ml | ml |
| Number of doses: | 1 | |
| Offset between pumps: | | minutes |
| Start time: | 0:00 | |

Days: ☑ Mon ☑ Tue ☑ Wed ☑ Thu

☑ Fri ☑ Sat ☑ Sun

BACK          STEP 2/5          NEXT

For the Dosing pump X3 / Dosing pump X4 it is required for safety reasons, to set the delay between each head dosing cycle. It has to be set to prevent the dosing liquids from mixing. The pumps cannot be operating at this same time.

**Step three** - connect the device with you home Wi-Fi network. If the network is protected from unauthorized access please type in the password.
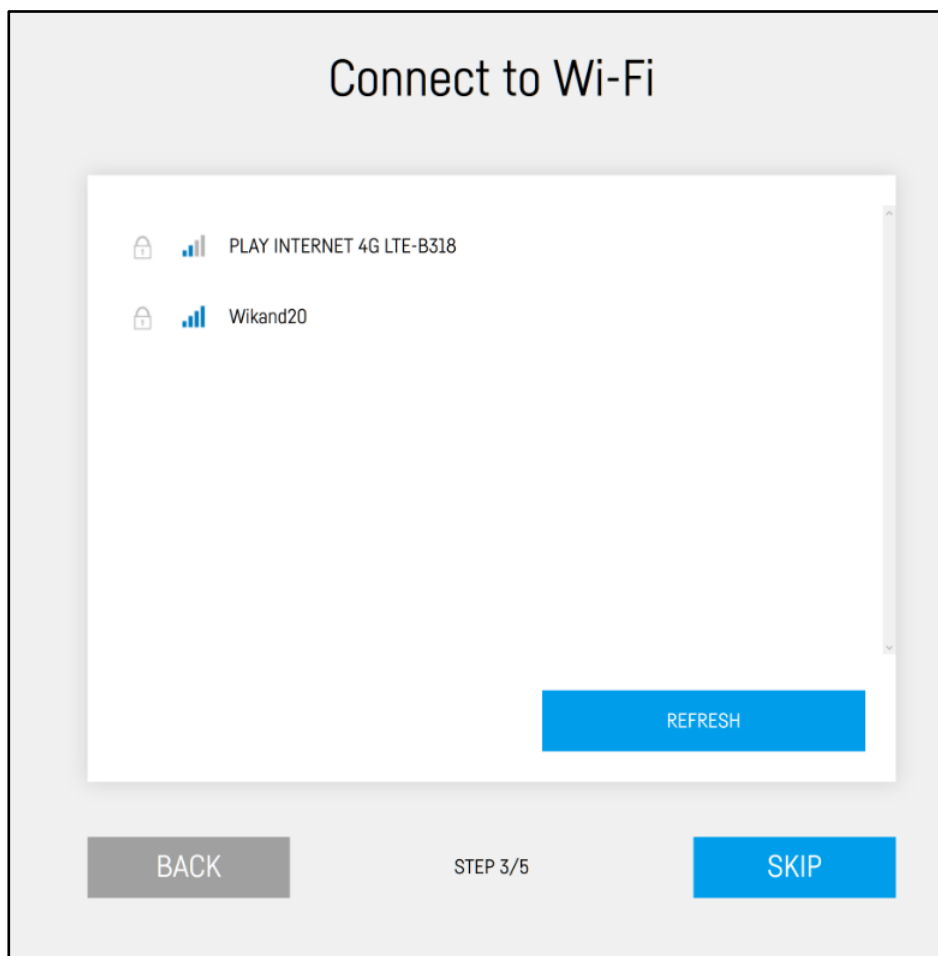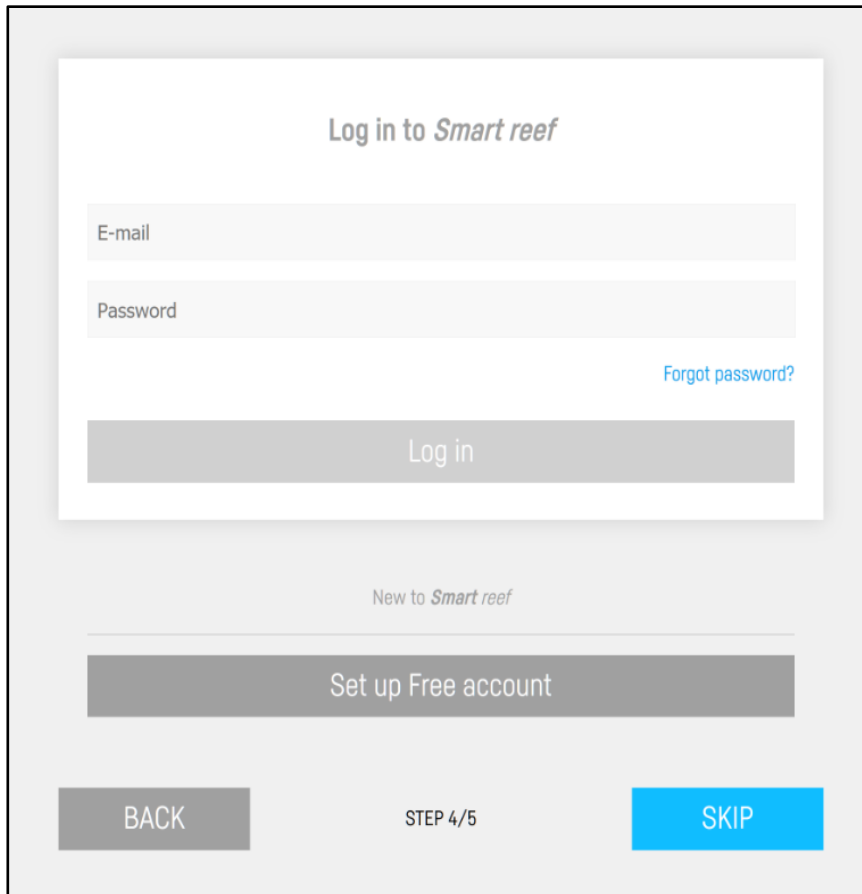


If the device won't connect with your home wireless network please repeat the connection process. The success of the connection depends on the routing device type and the producer. The signal strength should be as strong as possible. Remember, that the device which Dosing pump connects has to have access to the Internet to connect with the **Smart Reef** system.

After the device connects properly to the Wi-Fi network you should see IP address that has been assigned to your device. It means that the connection was successful.
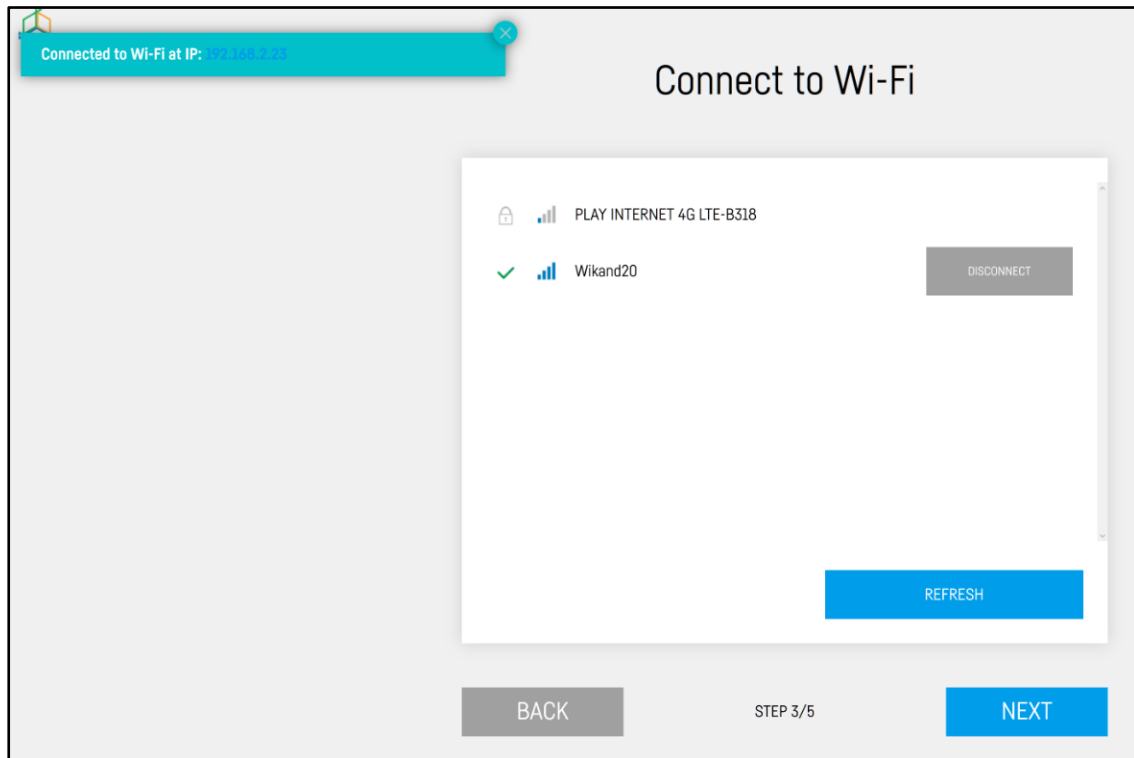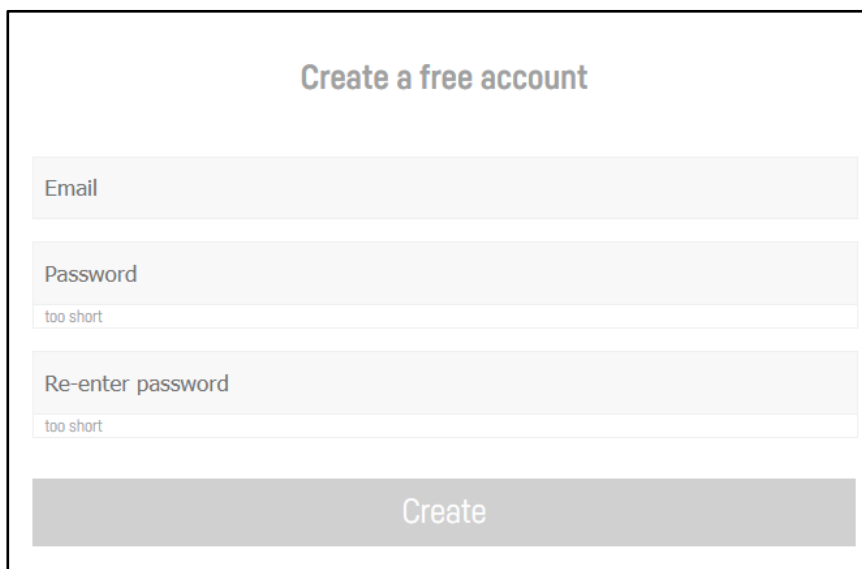


The appearance of the IP number means that everything is alright.

**Step four** – register free **Smart Reef** account by pressing the "Set up Free account" button.



If you already have a **Smart Reef** account, enter your login data to add your new device to the system.



! **The password should be sufficiently complicated and hard to crack.**

Logging in the **Smart Reef** system will allow you to remotely control the device and allow you to access additional functionality. You can skip this step if you don't want to control your device remotely, you will however loose many features and ability to update the device.

**Step five** – congratulations! The configuration process of the Dosing pump / Dosing pump PRO / Dosing pump X3 / Dosing pump X4 / Dosing pump Large has been finished. After the process is finished please press the "FINISH" button.
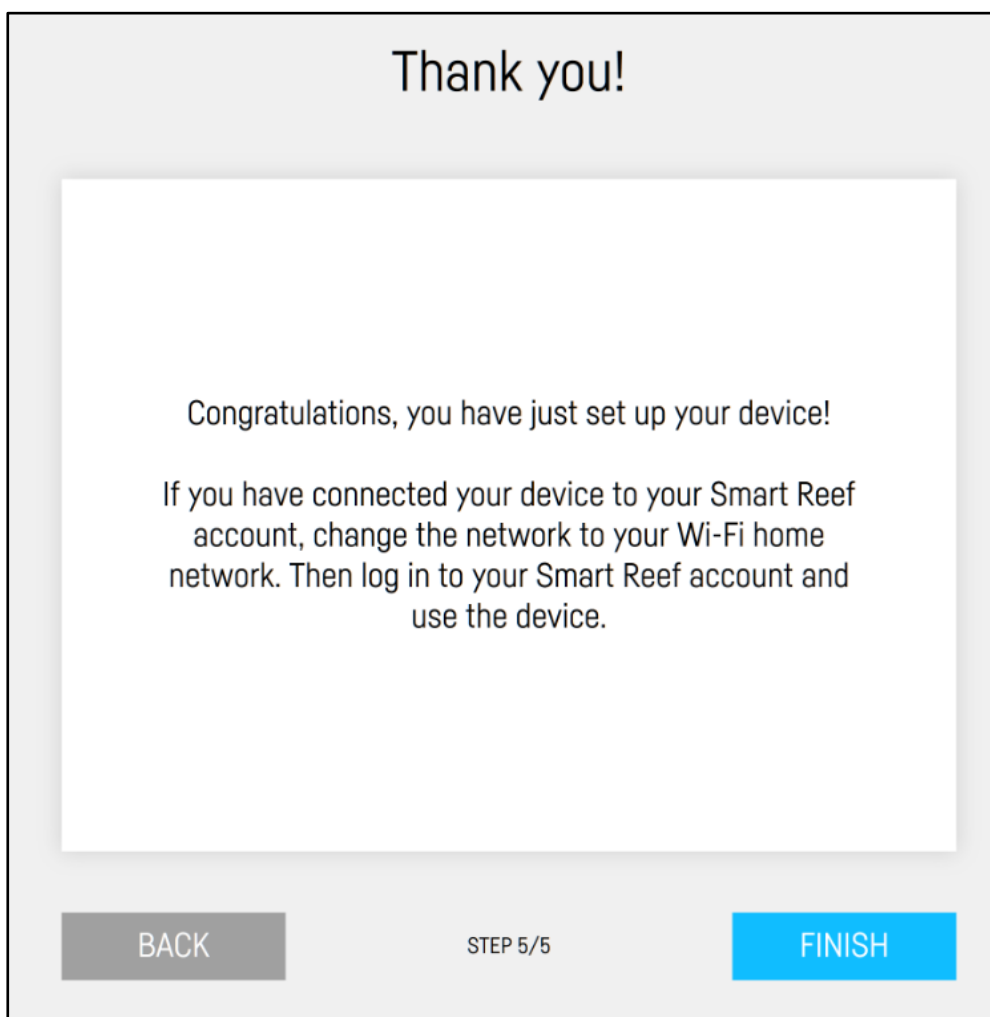


Notice the icons located in the upper right corner of the screen. They make it possible to change the date and time, language, view the history of notifications registered by the device, contact us and access many more interesting features offered by the device.
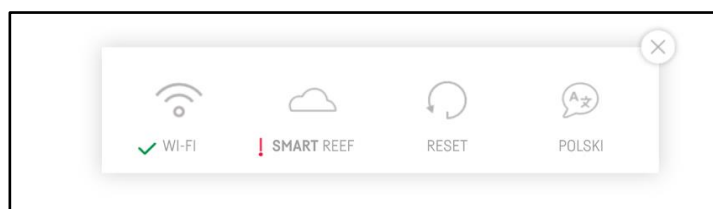


✔ symbol means that the device is connected while ❗ means there is no connection.

TODAY
0.00 ml/<sub>1.00 ml</sub>

DOSING

Time left:
**100%** 100 days
100.00 ml

100.00 ml

EDIT

MANUAL REFILL

Next calibration
**31-Jan-20**

CALIBRATE
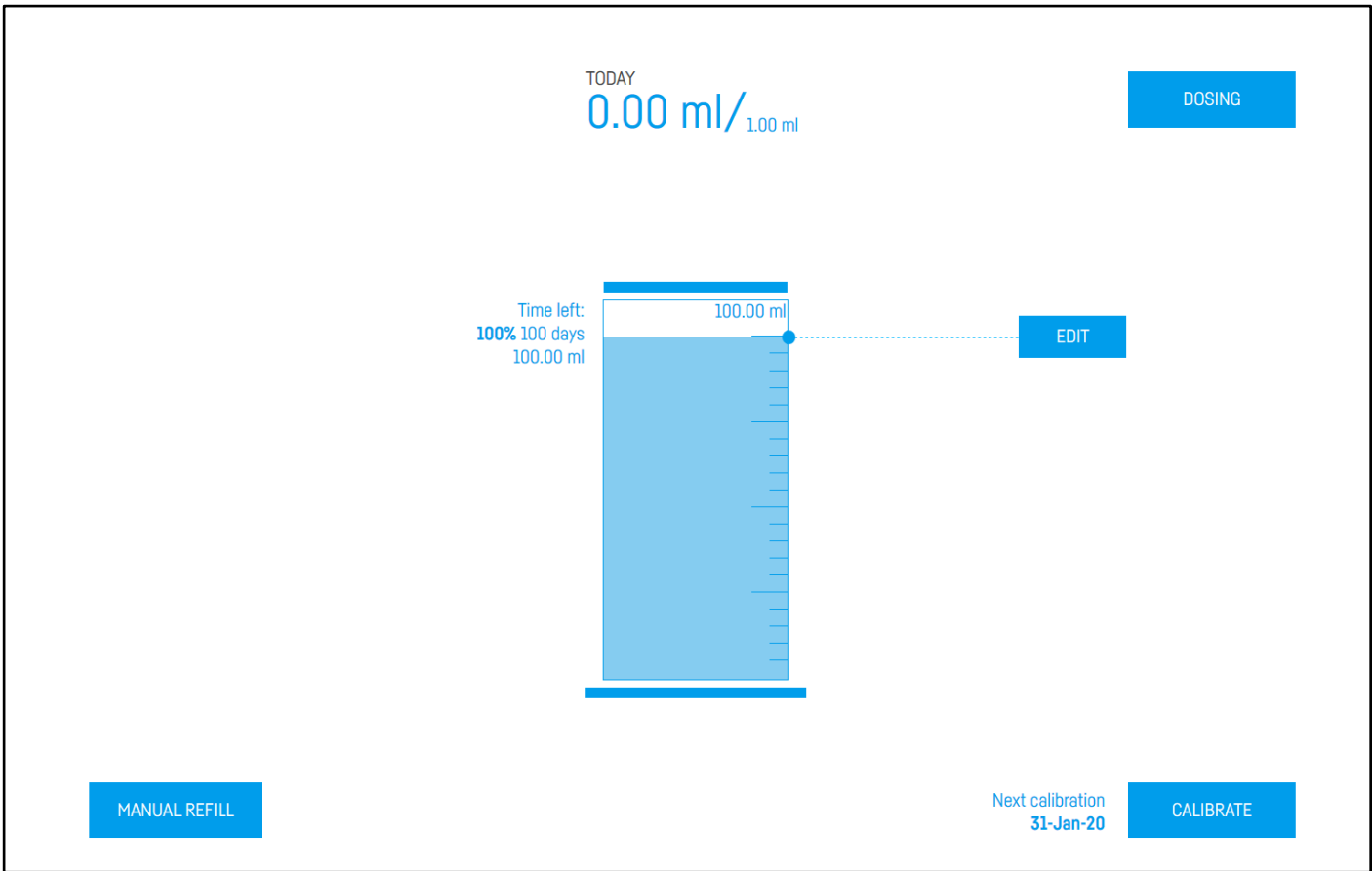
The status screen differs for the Dosing pump X3 / Dosing pump X4, that is why we are presenting it separately below. Functionality is this same to the other Dosing pumps. Selecting one of the pumps (A, B, C or D) will present detailed information about the pump.
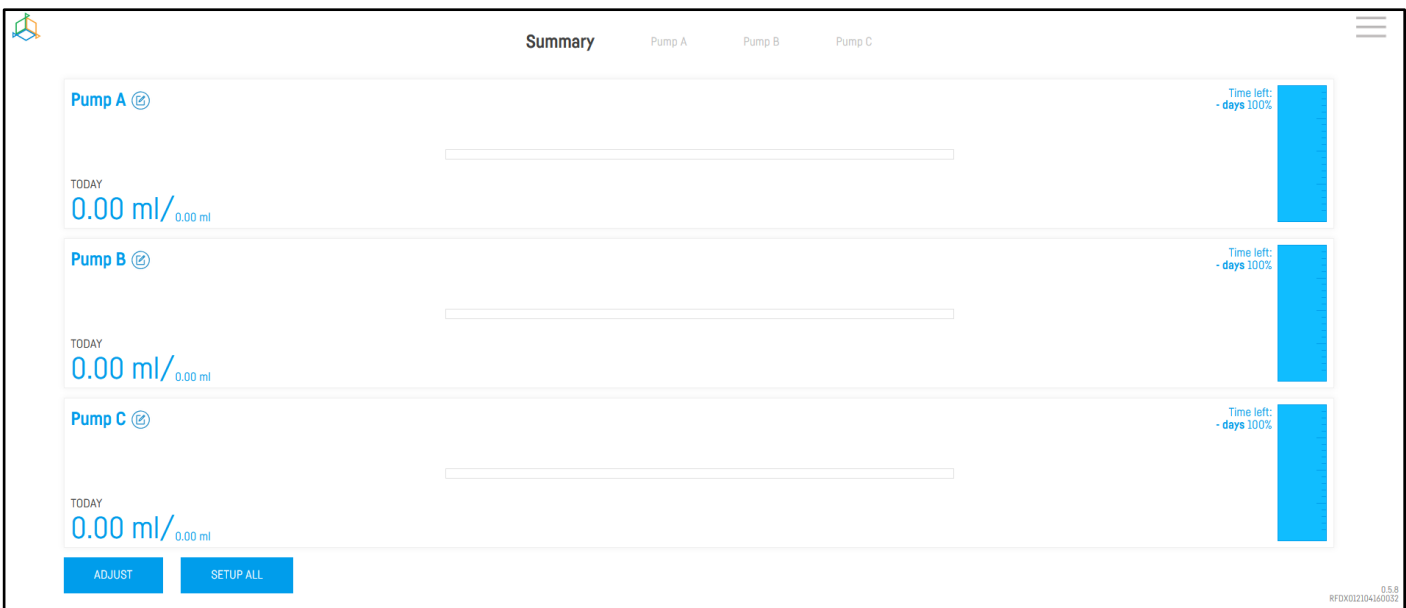
# III. Pump calibration

1. In the lower right corner you can find the button to calibrate your device. Performing the calibration of your new pump is very important step as it has direct impact on the pump accuracy. The device has to be calibrated according to the instructions displayed on the screen. The calibration screen allows for filling the pump's circuit. (FILL THE CIRCUIT button). When the circuit is filled with liquid you can start the calibration procedure.

<div align="center">

**Calibration**

The device will be turned on for 30 s.
Check how much liquid will be dispensed during this time.

**Remember** to fill the circuit before calibration.

| BEGIN CALIBRATION | FILL THE CIRCUIT |
|---|---|

</div>
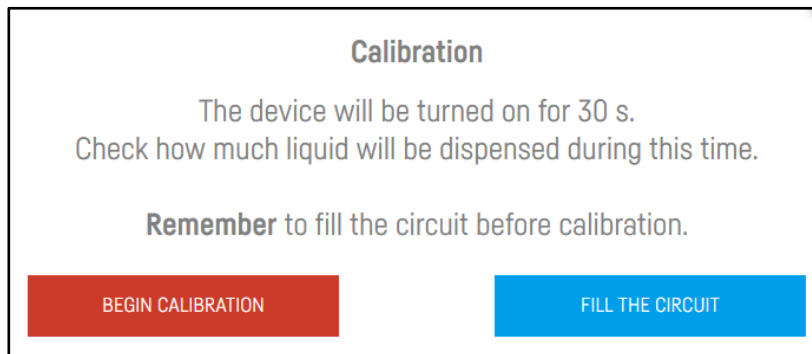
2. The calibration has to be performed right after the initial configuration of the device. Prepare the container that will allow you to measure the amount of liquid (you can use scale, but you might need to know the density of the liquid to calculate the volume). When you have exit of the pump inside the container you can start the calibration procedure. The pump will start operating for 60 seconds.

<div align="center">

**Calibration**

Calibration in progress...
Please wait.

| CANCEL |
|---|

</div>
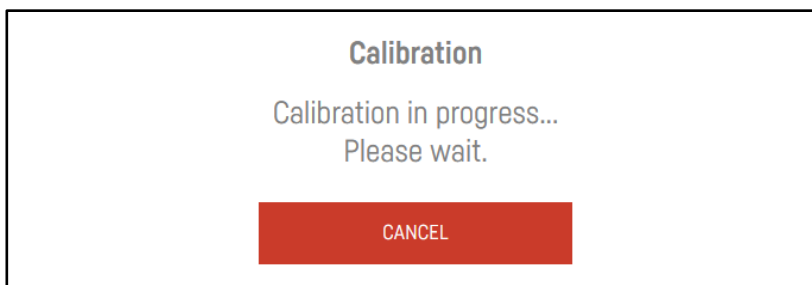
3. When it stops you will have to put the volume of the liquid in millilitres into the box on the screen.

<div align="center">

**Calibration**

Specify how many ml have been dispensed.

ml

| OK | CANCEL |
|---|---|

</div>
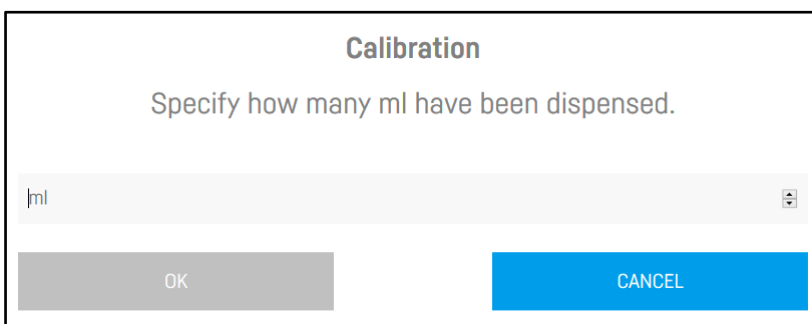
4.  In the next step you will be choosing the time period after which you would like to be reminded to calibrated the pump again. You will receive notification when there is time to calibrate your pump again.



5.  The amount of liquid that has been added during the day is displayed on the top of the screen.
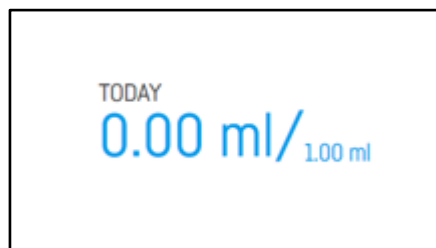
# IV.   Manual dosing
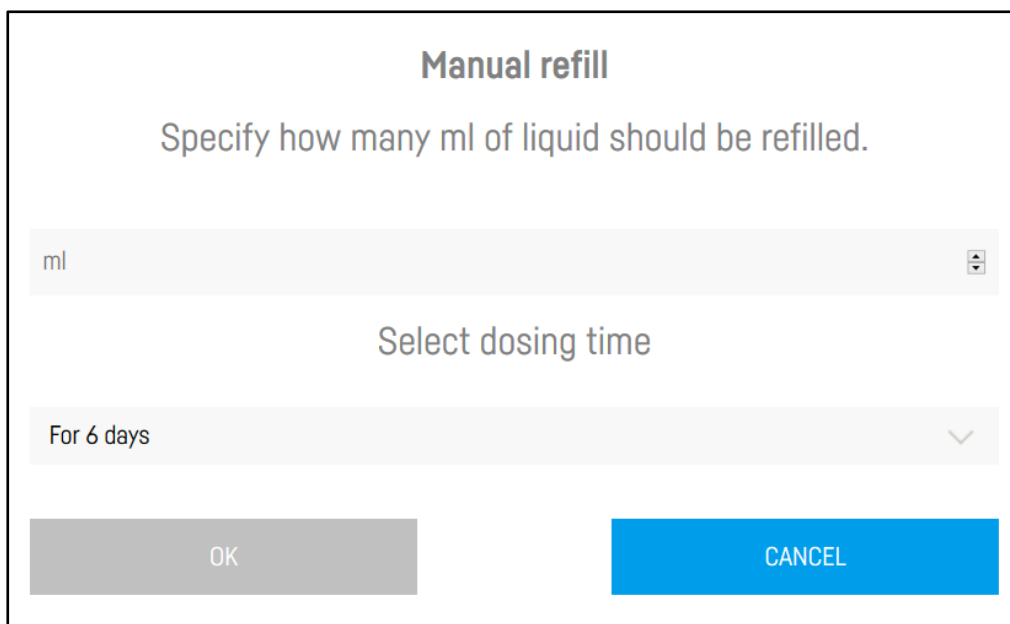
In the lower left corner you can find an option to perform manual dosing. This function allows the user to manually order the Dosing pump to dose certain amount of liquid. It can be either a single dose or it can be performed automatically for the selected period of time. Negative number reduces the amount of liquid that will be dosed during the day/days and the positive number will increase the dosage for that time.

**EXAMPLE:** You are dosing 6 ml of liquid every day with 6 doses 1 ml each and planning to increase/decrease the dosage by 3 ml:

- increasing the daily dosage by 3 ml will change the daily amount to 9 ml in 6 doses. This gives you 1,5 ml per single dose each day the manual dosing is active;

- decreasing the daily dosage by 3 ml will change the daily amount to 3 ml in 6 doses. This gives you 0,5 ml per single dose each day the manual dosing is active.

For the Dosing pump Large the amount of dosed liquid are respectively higher.



Select option "OK" to execute the manual dosing right after you accept the settings.

## Manual refill

1.67/5.00 ml of liquid added.

CANCEL

## Manual refill

Manual refill completed.

OK
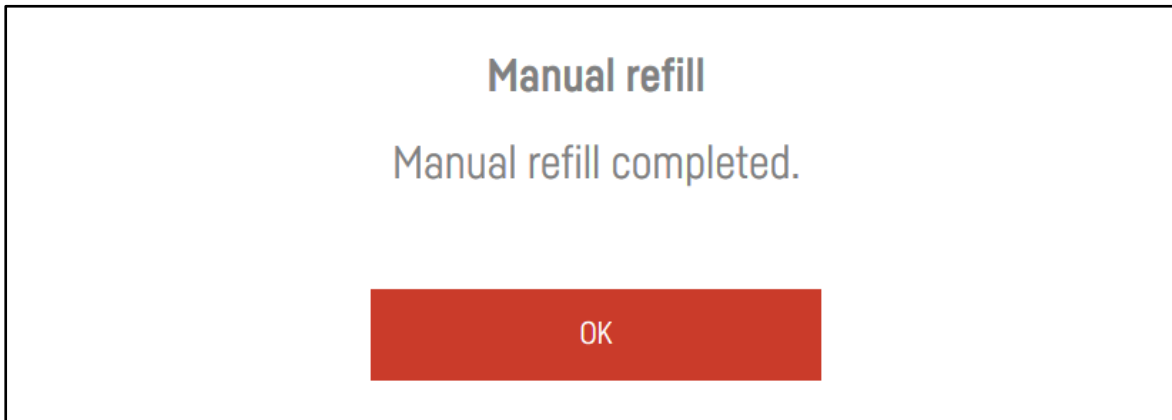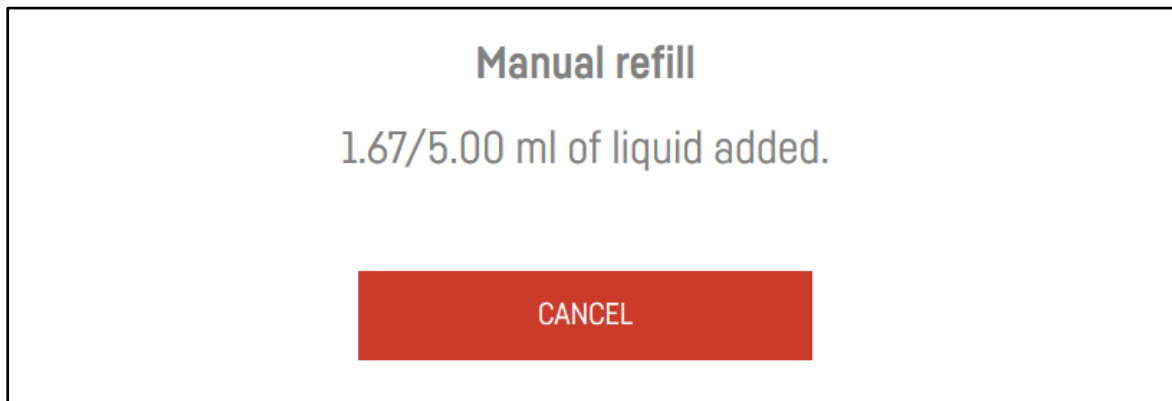
After the manual dosing period has ended, the pump will return to the unmodified schedule that was set before.

# V. Additional functions

In the middle part of the screen you will find the information about the amount of liquid left in the container that pump is using. The user can monitor this value and refill the container if needed. The edit options allows for setting the container volume and the current liquid volume.
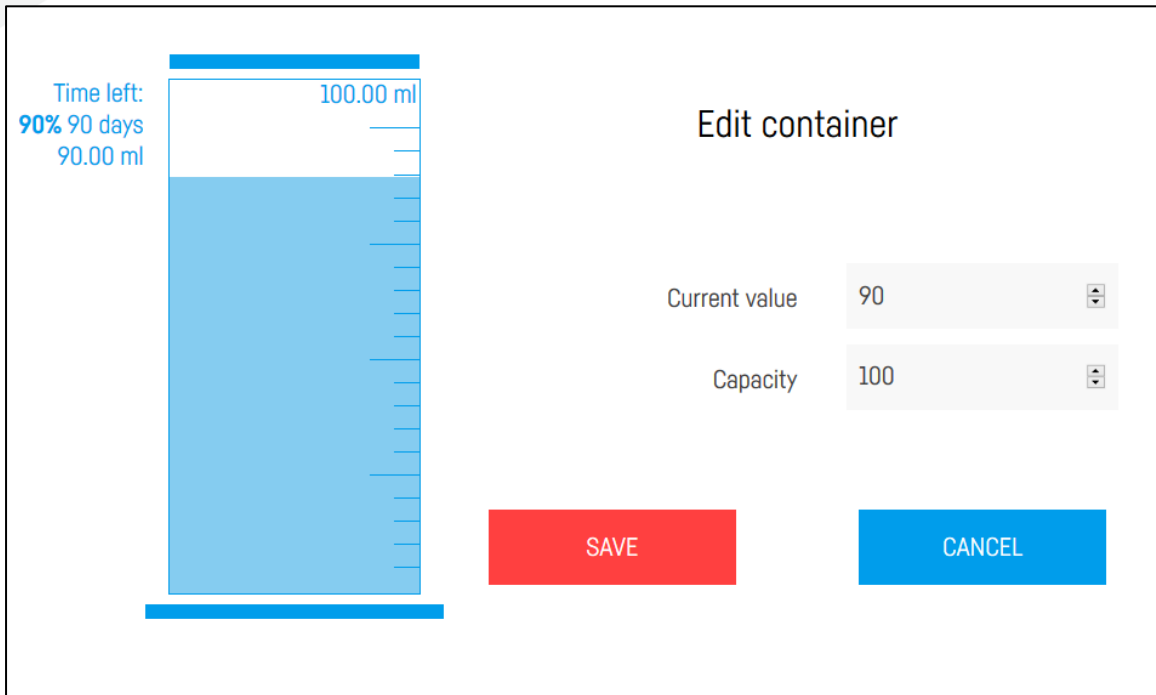


When the amount of liquid inside the container is lower than 10% the device will notify you about this. The notification will be send trough the **Smart Reef**. You can then refill the container with fresh batch of liquid. The "Show more..." button allows for checking the detailed history of the dosing.

In the upper right corner of the screen you can find additional advanced dosing functions ("DOSING" button), that allows you to select the amount of doses or the amount of liquid dosed each day. The pump will automatically calculate and set the time of each dose. You will also see the percent value of the dose in reference to the daily amount. When you press the button you will see:

- **Edit** – allows for changing (adding, removing, increasing or decreasing) scheduled dosing.



- **Skip the next dose** – this function allows for skipping or decreasing the next scheduled dose. Put the percent value in the range from 1% to 100% to decrease the dose. 100% means that the next dose will be skipped completely. If you change your mind and don't want to skip the dose, select "DOSING" and in the menu select "delete skip next dose".



---

- **Export** – exporting lets you save the dosing schedule to the file. You can keep this file in case of a need to reset the pump to factory settings or send it to other Dosing pump user.

- **Import** – this allows you to upload previously saved schedule or schedule received from a different user to your Dosing pump without the need to configurating it manually.

The maximum daily amount of dosing cycles is 24 (for big aquarium system where there is a need for dosing large amounts of liquid). For standard tanks (up to 300l) we recommend the maximum of 10 dosing cycles per day. Adjust function allows you to increase the amount of liquid dosed during the day.

# VI.   Resetting the device

If your device is not operating properly, you would like to do clean configuration or you can't connect with your device after many attempts, you can bring it back to the factory settings put the magnet (included in the box) against the designated spot on the device housing.

> **?**   Put the magnet against the **RESET** sticker.

# VII. Smart Reef system

Connect to your home network with your computer or mobile device. Now go to www.reeffactory.com and log onto your **Smart Reef** account. Check if the device was properly added to your device's list.

You can change the device's name and add it the aquarium system of your choice. In the lower right corner you can find your device's serial number and its firmware version.

Our devices are SMART and we are constantly developing and improving on them. Once in a while you will receive the information about the new update available for your device. This allows your device to work even better.
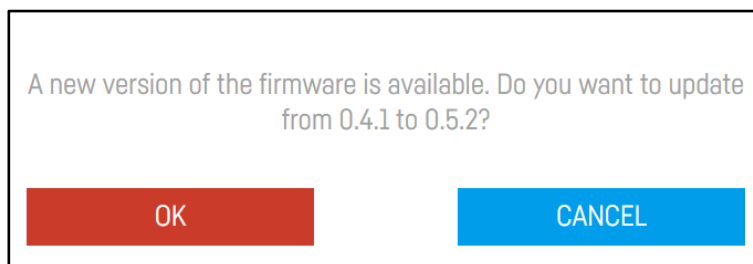


By pressing OK button you will start the automatic update process.



Firmware update in progress, wait for the device to reconnect.

During the update, do not disconnect the device from the power supply. If the update does not finish within the next 30 minutes, disconnect the device from the power supply and switch it on again.

After the update, check the device settings. In some cases, due to the update, they may be changed or reset to factory settings.

> **?** You will always find additional and most up to date information about the device its use and configuration on our webpage www.reeffactory.com.

# VIII. Technical problems and possible causes

The table below presents the typical problems that you can encounter when using the device and solution to these problems.

| ? Problem | ! Cause | Solution |
|---|---|---|
| The device does not power on and does not broadcast Wi-Fi signal. | No power. | Check if the power cord is properly connected to the socket. Then, use the magnet to bring the device to the factory settings. Check if the problem has been resolved. |
| Can't log in to the device. | No direct connection between the device and your phone/computer. | Check if your computer or phone is connected to the device's network. Sometimes it automatically connects back to your home network. Check if the problem has been resolved. |
| The device is not visible in the Smart Reef. | The device has not been properly connected to your home network or is not logged in to the Smart Reef. | Log in to the device and check if the Smart Reef and Internet status icons are displaying that the device is properly connected. If they are not, please log in to your account or connect the device to your home network. |
| The device loses the connection to the Smart Reef. | The range of your home network is not sufficient. | Remember, that your home network can have different signal strength in different rooms. It could be too low in the vicinity of the device. Try to move the device closer to your router or use a repeater to extend your home network range in the area. Check if the problem has been resloved. |
| The device does not broadcast Wi-Fi or you can't log into the device. | The device may require a reset. | Put the magnet against the designated spot on the housing, wait for 5 seconds. Open the list of available networks, connect with the device and perform configuration. |
| The pump is dosing the wrong amount of liquid. | Calibration is required or the pump head has worn down. | Perform the calibration of the Dosing pump. If the problem hasn't been resolved, replace the worn down pump head with a new one Check if the problem has been resolved. |

! If the above solutions didn't help resolve your problem, please contact us at support@reeffactory.com and describe your problem. Additional and most recent information about the device, its service and configuration can always be found on our webpage www.reeffactory.com in the product tab.

REMEMBER. If you don't have the skills, knowledge and experience, never perform any repairs to the device on your own. The device is powered with a voltage of 110V-230V. Working with voltage may cause electric shock, loss of health and even loss of life. Servicing has to be done by

# IX. Additional information

1. The manufacturer of the equipment described in this manual is:

Reef Factory Sp. z o.o.

Bydgoska 94

86-032 Niemcz

Poland

Website: www.reeffactory.com

2. The manufacturer states that offered products are in accordance with the following standards:

- RoHS 2011/65/EU,

- RoHS 2015/863,

- RED 2014/53/EU.

3. Reef Factory states, that the products are in line with the 2014/53/UE directive. The full text of the EU Declaration of Conformity is available at the following web address: https://eur-lex.europa.eu/legal-content/PL/TXT/?uri=uriserv%3AOJ.L_.2014.153.01.0062.01.POL&toc=OJ%3AL%3A2014%3A153%3AFULL

4. Reef Factory device are intended only for home use or stores operating in the aquarium industry – they are not dedicated to industrial applications.

5. The equipment is suitable for dispensing non-hazardous liquids, such as caustic substances, acids of high concentration or flammable substances. In case of doubts whether a particular substance can be dosed with our equipment, please contact us.

# X. Warranty terms and conditions

Reef Factory Sp. z o.o. does not guarantee the uninterrupted or error-free operation of the product. The warranty covers only technical hardware problems that occurred during the warranty period and under normal conditions of use.

1. Reef Factory Sp. z o.o. products are under warranty for a period of:
   - 24 months for individual and business customers using consumer products.
   - 12 months for business customers using products in "demo" versions.
2. Accessories and spare parts for the product are under warranty for a period of 6 months.
3. The warranty is based on a receipt or purchase invoice that clearly shows the date of purchase and the name of the product.
4. Technical defects of the product revealed during the warranty period will be removed free of charge as soon as possible, not exceeding 14 days from the date of delivery to the Authorized Service Center.
5. The customer has the right to exchange the product for a new one in the event that:
   - Five repairs requiring replacement of components were made during the warranty period, and the product continues to exhibit defects,
   - The Authorized Service Center has stated that the defect is not fixable.
6. The conditions for a warranty repair are:
   - Delivering the product in the original factory packaging or other protective packaging for the device during transport to the Authorized Service Center.
   - Presenting the proof of purchase in the form of invoice or receipt,
   - Describing the fault that occurs in the product.
7. The guarantee does not include:
   - Wear of materials and components during normal use of the product (e.g., wear of consumable components such as probes, sensors, pump heads, hoses, etc.),
   - Mechanical damage and defects caused by them,
   - Damage caused by improper use or storage of the product contrary to the operating instructions,
   - Damages resulting from unauthorized repairs and modifications carried out by the customer or unauthorized persons,

- Damages resulting from natural wear and tear such as scratches, dirt, abrasions, wiped inscriptions, etc.

8. The staff of the Authorized Service Center are authorized to assess the causes of product defects.

9. The repair period may be extended in case of disturbances caused by forces beyond our control – such as natural disasters, civil unrest, etc.

10. The warranty do not include the right of the customer to claim reimbursement of lost profits or incurred losses due to product's defects.

11. The warranty period is extended by the time the device stays at the Authorized Service Center.

12. Conditions not covered by the terms of this warranty shall apply the relevant provisions of the law.

13. The warranty does not exclude, limit or suspend the rights of the customer under the statutory warranty for the product.

14. Repaired or replaced product may include new or refurbished components.

15. Repairing or replacing the product involves a significant risk of losing data stored in the product related to its configuration and measurement history. Therefore, the customer have to accept that during repair or replacement of the product, the data may be erased.

16. Reef Factory Sp. z o.o. is not responsible for the lack of compatibility of the product with other manufacturers' accessories or devices used by the customer. This applies to network devices, which may limit the possibility of connection and data exchange between the device and the product.

17. The customer delivers the product at his own expense to the Authorized Service Center.

18. The Authorized Service Center may repair/rebuild the product at the Customer's expense as post-warranty repair. The customer must accept this cost before repairing it.

19. The Authorized Service Center may refuse to repair or replace a product which, after testing under service conditions, does not show any defect in the product.

20. Reef Factory Sp. z o.o. is not liable for incidental or consequential damages, caused by breach of the warranty or any conditions or any other theory of law, including, but not limited to: loss of use, loss of revenue, loss of actual or anticipated profits (including loss of profits from contracts), loss of business, loss of opportunity, loss of goodwill, loss of reputation.

21. Reef Factory Sp. z o.o. is not be liable for direct or indirect damages caused by malfunction or failure of the equipment, or for damages occurring during the period of repair or replacement of the equipment related to the inability to use the equipment.

# XI. Technical specs

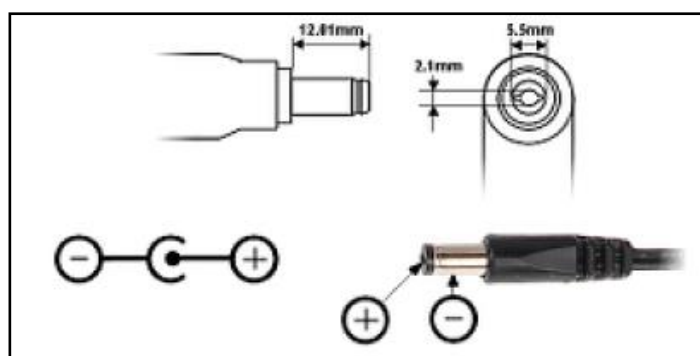| Device's name | Device's model | Dosage accuracy / efficiency | Working temperature / humidity | Powering | Dimensions (mm) | Weight |
|---|---|---|---|---|---|---|
| Dosing pump | RFDP01 | +/- 0,1ml/ 25ml per minute | 10 – 50 (°C) / 0 – 99 (%) | Dedicated 12V 1A power supply | 55x70x100 | 210g |
| Dosing pump Pro | RFPP01 | +/- 0,01 ml / 7ml per minute | 10 – 50 (°C) / 0 – 99 (%) | Dedicated 12V 1A power supply | 55x70x100 | 340g |
| Dosing pump Large | RFDL01 | +/- 10 ml / 1000ml per minute | 10 – 50 (°C) / 0 – 99 (%) | Dedicated 12V 1A power supply | 125x100x150 | 1100g |
| Dosing pump X3 | RFDX01 | +/- 0,1 ml / 25ml per minute | 10 – 50 (°C) / 0 – 99 (%) | Dedicated 12V 1A power supply | 195x50x100 | 520g |
| Dosing pump X4 | RFDZ01 | +/- 0,1 ml / 25ml per minute | 10 – 50 (°C) / 0 – 99 (%) | Dedicated 12V 1A power supply | 255x50x100 | 760g |

# XII.   Dedicated power adapter - user guide

1. Make sure to connect the power adapter first to the device and next to power supply.

2. The power adapter is supplied from the grid. There is a risk of electric shock. Do not remove the power adapter housing yourself!

3. There is a risk of fire or electric shock. Leave the power adapter vents exposed to enable natural air circulation and protect the device from foreign objects or liquid spillage.

4. Using a wrong DC plug or forcing the DC plug into an electronic device may cause damage to the device or its malfunction.

5. Desktop power adapters should be placed on a stable surface. Falling can lead to permanent damage.

6. Do not place power adapters in high humidity locations or near water.

7. Do not place power adapters in high ambient temperature locations or near sources of heat or fire.

8. The output current and output power must not exceed the rated values provided in the specification.

9. Disconnect the device from power supply before cleaning. Do not use liquid or aerosol cleaners. Only use a damp cloth for wiping.

10. To dispose of this product, contact a local licensed recycling company. Do not dispose of your power adapter with mixed municipal waste.

The table below lists the power adapters dedicated for our devices along with the models and names of the devices they can be used with.

| Power adapter model | Power adapter parameters | Power adapter specification | List of compatible devices |
|---|---|---|---|
| TPS-1201000ZZ | Plug power adapter 12 V 1 A DC | Input voltage: 100-240 V AC<br>Operating frequency: 50-60 Hz<br>Maximum input current: 0.6 A<br>Output voltage: 12 V DC (11.4-12.6 V)<br>Output current: Max. 1 A<br>Input connector type: DC 5.5/2.1 | 1. Level sensor *<br>2. Thermo view *<br>3. PH meter *<br>4. TDS meter *<br>5. TDS meter Plus<br>6. Dosing pump<br>7. Dosing pump PRO<br>8. Dosing pump X3<br>9. Dosing pump X4<br>10. KH keeper<br>KH keeper Plus<br>* - First generation devices were powered by a 3.3 V 2 A power adapter. Before purchasing a power adapter, contact us to find out which power adapter is suitable for your device. |
| TPS-1202000ZZ | Plug power adapter 12 V 2 A DC | Input voltage: 100-240 V AC<br>Operating frequency: 50-60 Hz<br>Maximum input current: 0.6 A<br>Output voltage: 12 V DC (11.4-12.6 V)<br>Output current: Max. 2 A<br>Input connector type: DC 5.5/2.1 | 1. Salinity guardian |
| TPS-1204000ZZ | Plug power adapter 12 V 4 A DC | Input voltage: 100-240 V AC<br>Operating frequency: 50-60 Hz<br>Maximum input current: 1.2 A<br>Output voltage: 12 V DC (11.4-12.6 V)<br>Output current: Max. 4 A<br>Input connector type: DC 5.5/2.1 | 1. Dosing pump Large |
| GST120A24R7B | Desktop power adapter 24 V 5 A DC | Input voltage: 85-264 V AC<br>Operating frequency: 47-63 Hz<br>Maximum input current: 1.4 A<br>Output voltage: 24 V DC (23.8-25.2 V)<br>Output current: Max. 5 A<br>Input connector type: R7B 4 PIN | 1. Reef flare S<br>2. Reef flare Pro S |

| | | | |
|---|---|---|---|
| GST220A24R7B | Desktop power adapter 24 V 9.2 A DC | Input voltage: 85-264 V AC<br>Operating frequency: 47-63 Hz<br>Maximum input current: 1.7 A<br>Output voltage: 24 V DC (23.8-25.2 V)<br>Output current: Max. 9.2 A<br>Input connector type: R7B 4 PIN | 1. Reef flare M<br>2. Reef flare Pro M<br>3. Reef flare L |
| GST280A24R7B | Desktop power adapter 24 V 11.67 A DC | Input voltage: 85-264 V AC<br>Operating frequency: 47-63 Hz<br>Maximum input current: 2.0 A<br>Output voltage: 24 V DC (23.8-25.2 V)<br>Output current: Max. 11.67 A<br>Input connector type: R7BF 4 PIN | 1. Reef flare Pro L |
| GST280A24R7B | Desktop power adapter IDLC-45A-500 | Input voltage: 90-295 V AC<br>Operating frequency: 47-63 Hz<br>Maximum input current: 0.16 A<br>Output voltage: 35-50 V<br>Output current: Max. 0.5 A<br>Input connector type: N/A | 1. Reef flare Bar S<br>2. Reef flare Bar M |
| GST280A24R7B | Desktop power adapter IDLC-45A-1050 | Input voltage: 90-295 V AC<br>Operating frequency: 47-63 Hz<br>Maximum input current: 0.4 A<br>Output voltage: 16.8-24 V<br>Output current: Max. 1.05 A<br>Input connector type: R7BF 4 PIN | 1. Reef flare Bar L |

DC 5.5/2.1 connector diagram:



R7B and R7BF connector diagram:

| R7B | | |
|---|---|---|
| | **PIN NO.** | **OUTPUT** |
| | 1,4 | +V |
| | 2,3 | -V |

```
2    3
  ○ ○
  ○ ○
1    4
```

AC FG

-V connected to AC FG